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10/588,495	08/04/2006	Frank Forster	4001-1225	9223

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EXAMINER	
HENSON, MISCHITA L	
ART UNIT	PAPER NUMBER
2857	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DocketingDept@young-thompson.com

Office Action Summary	Application No.	Applicant(s)	
	10/588,495	FORSTER, FRANK	
	Examiner	Art Unit	
	Mi'schita' Henson	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 28 December 2010.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1,3,5,6 and 10-18 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 02 August 2006 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

This action is responsive to the amendment filed December 28, 2010. Claims 1, 5 and 10 have been amended. It is noted that on page 9 of Applicant's remarks, claim 10 is indicated as amended, however, the status identifier indicates "previously presented". For examination purposes, claim 10 is treated as amended. Claims 13-18 are new. Claims 1, 3, 5-6 and 10-18 are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 5-6 and 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Geng in US Patent 6,028,672.

Regarding **claim 5**, Geng teaches:

A method for determining spatial co-ordinates of an object(s) (see three-dimensional surface profile measurement method, Abstract), comprising:

- projecting a pattern (4) with known projection data onto an object (2) (see a projected rainbow color pattern, column 3 lines 44-47; see also see spatially varying color pattern, column 4 lines 52-53 and Fig. 9; see also spatially varying wavelength illumination, column 3 lines 34-36 and column 9 lines 17-18) by using a projector (see light projector, column 4 lines 13-16, column 6 lines 42-54, Figs. 1-2 and 9-10);

- creating two object images (8) with aid of two cameras (6) (see “Two color CCD cameras”, column 3 lines 36-38; see also captured images, column 4 lines 30-55, column 5 lines 24-28; see also “…a pair of CCD cameras...The images, which contain both intensity and color...", column 4 lines 17-25, column 6 lines 59-61 and Fig. 1);

- determining the spatial co-ordinates from the known projection data (see three-dimensional surface profile measurement method, Abstract) in a data processing unit (7) (see host computer, column 4 lines 25-26, column 5 lines 66-67 and Fig. 1) using a structured light approach (see structured light techniques, column 2 lines 7-10 and column 4 lines 57-58), in which the spatial co-ordinates of the object (2) are respectively determined using a known distance between the projector (s) and the camera (6) (see baseline, column 2 lines 16-17, column 7 lines 21-22 and Fig. 1);

- if the spatial co-ordinates are determined incorrectly, determining additional spatial co-ordinates of the object (2) are on a basis of the projection data and one of the object images (8, 9) by searching for corresponding image points (S_l, S_r) in the object images (8, 9) (see Two Complementary Stereo Matching Schemes, column 7 line 15 - column 8 line 48) and a subsequent triangulation (see triangulation algorithm/principle, Abstract, column 3 lines 40-41 and Fig. 1; see also active triangulation, column 2 lines 9-50) using a known distance between the two cameras (6) (see “the length of "base line", B, between two cameras is known", column 4 lines 35-37).

Regarding **claim 6**, Geng teaches the limitations of claim 5 as indicated above. Further, Geng teaches:

The method as claimed in claim 5, wherein corresponding pixels (S_l, S_r) are searched for along epipolar lines (16, 17) (see epipolar line, column 8 lines 20-48 and Fig. 5).

Regarding **claim 15**, Geng teaches the limitations of claim 5 as indicated above. Further, Geng teaches:

The method according to claim 5, wherein the pattern (4) is composed of stripes that are projected consecutively onto the object (2), with stripe widths of the pattern varying (see “producing a continuous spatially varying wavelength (rainbow-like color) illumination of the scene”, column 3 lines 34-36; see also “the LVWF is a rectangular optical glass plate coated with gradually varying wavelengths of colors”, column 6 lines 1-3; see also “popular structured light techniques include light stripe method…active triangulation a beam of light is used to form a bright stripe on an object's surface”, column 2 lines 8-17).

Regarding **claim 16**, Geng teaches the limitations of claim 5 as indicated above. Further, Geng teaches:

The method according to claim 5, wherein the two object images (8, 9) yield three-dimensional data (see “the proposed Rainbow Stereo 3D camera exploits a projected rainbow color pattern as unique landmarks of each pixel for correspondence registration…A simple and efficient 3D triangulation algorithm can be formulated to generate full frames of 3D images in high speed”, column 3 lines 44-54).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3, 10-14 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geng in US Patent 6,028,672, in view of Pettersen et al. 2002/0048027.

Regarding **claim 1**, Geng teaches:

A device for determining spatial co-ordinates of an object(s), comprising:

a projector (3) which projects onto the object (2) (see light projector, column 4 lines 13-16, column 6 lines 42-54, Figs. 1-2 and 9-10; see object, column 4 lines 18-20 and Figs. 1-2 and 9-10) a pattern (4) with known projection data (see spatially varying color pattern, column 4 lines 52-53 and Fig. 9; see also spatially varying wavelength illumination, column 3 lines 34-36 and column 9 lines 17-18);

two cameras (6) which respectively create two object images (8, 9) of the pattern (4) projected onto the object (2) (see "...a pair of CCD cameras...The images, which contain both intensity and color...", column 2 lines 17-25, column 6 lines 59-61 and Fig. 1), the pattern (4) containing encoded projection data (see "simple and elegant way to encode", column 4 lines 52-56; see also encodes, column 7 lines 34-38);

a data processing unit (7) (see host computer, column 4 lines 25-26, column 5 lines 66-67 and Fig. 1) connected downstream from the two cameras (6), which

determines spatial co-ordinates of the object (2) from the two object images (8, 9) and the known projection data (see three-dimensional surface profile measurement, Abstract) using a structured light approach (see structured light techniques, column 2 lines 7-10 and column 4 lines 57-58), in which the spatial co-ordinates of the object (2) are determined using known distances between the projector (3) and the two cameras (6) (see baseline, column 2 lines 16-17, column 7 lines 21-22 and Fig. 1); and

the data processing unit (7) determines additional spatial co-ordinates of the object (2) from the two object images (8, 9) by a triangulation method (see triangulation algorithm/principle, Abstract, column 3 lines 40-41 and Fig. 1; see also active triangulation, column 2 lines 9-50) using a known distance between the two cameras (6) (see “the length of "base line", B, between two cameras is known", column 4 lines 35-37). Further, Geng teaches “the colors of corresponding pixel in searching space is unique and distinguishable" (column 7 lines38-39) and “the search of matching points requires less complex computations” (column 8 lines 12-13).

Geng differs from the claimed invention in that it does not explicitly teach redundant encoded projection data and searching for corresponding image points to problem areas in which an evaluation of the pattern images only produce an erroneous result.

Pettersen et al. teaches a method and system, using cameras, for determination of relative position and/or orientation of objects by projecting a pattern (Abstract, [0001]-[0008] and Figs. 2, 5 & 6). Further, Pettersen et al. teaches “The method of calculation is bases on minimizing errors (least squares method) such that the redundant

information is used" (i.e. redundant encoded projection data and restricting the search for corresponding image points to problem areas in which an evaluation of the pattern images only produce an erroneous result, [0025] and Fig. 2]). Since Pettersen et al. teaches the redundant data is used to minimize errors, it would have been obvious to one of ordinary skill in the art to search the redundant information for corresponding image points to problem areas in which an evaluation of the pattern images produces an erroneous result in order to correct the result, thus minimizing errors.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Pettersen et al. with Geng because Pettersen et al. teaches the principle of coordinate determination from the imaging of a common point in two or more cameras and a means for coordinate measurement that gives full flexibility with respect to the number of cameras and other features ([0009]-[0014] and [0021]-[0022]), thereby improving the flexibility of the system.

Regarding **claim 3**, Geng and Pettersen et al. teach the limitations of claim 1 as indicated above. Further, Geng teaches:

The device as claimed in claim 1, wherein epipolar lines (16, 17) pass through a plurality of marks of the pattern (4) (see epipolar line, column 8 lines 20-48 and Fig. 5).

Regarding **claim 10**, Geng teaches:

A method for determining spatial co-ordinates of an object(s) (see three-dimensional surface profile measurement method, Abstract), comprising:

- projecting a pattern (4) with known projection data onto an object (2) (see a projected rainbow color pattern, column 3 lines 44-47; see also see spatially varying color pattern, column 4 lines 52-53 and Fig. 9; see also spatially varying wavelength illumination, column 3 lines 34-36 and column 9 lines 17-18) by using a projector (3) (see light projector, column 4 lines 13-16, column 6 lines 42-54, Figs. 1-2 and 9-10);

- creating two object images (8, 9) with aid of two cameras (6) (see captured images, column 4 lines 30-55, column 5 lines 24-28; see also "...a pair of CCD cameras...The images, which contain both intensity and color...", column 2 lines 17-25, column 6 lines 59-61 and Fig. 1);

- determining the spatial co-ordinates from the known projection data (see three-dimensional surface profile measurement method, Abstract) in a data processing unit (7) (see host computer, column 4 lines 25-26, column 5 lines 66-67 and Fig. 1) using a structured light approach (see structured light techniques, column 2 lines 7-10 and column 4 lines 57-58), in which the spatial co-ordinates of the object (2) are respectively determined using known distances between the projector (s) and the two cameras (6) (see baseline, column 2 lines 16-17, column 7 lines 21-22 and Fig. 1);

- if the spatial co-ordinates are determined incorrectly, additional spatial co-ordinates of the object (2) are determined on a basis of the projection data and one of the object images (8, 9) by searching for corresponding image points (S_l, S_r) in the object images (8, 9) (see Two Complementary Stereo Matching Schemes, column 7 line 15 - column 8 line 48) and a subsequent triangulation (see triangulation algorithm/principle, Abstract, column 3 lines 40-41 and Fig. 1; see also active

triangulation, column 2 lines 9-50) using a known distance between the two cameras (6) (see “the length of "base line", B, between two cameras is known", column 4 lines 35-37).

Further, Geng teaches the pattern (4) contains encoded projection data (see “simple and elegant way to encode”, column 4 lines 52-56; see also encodes, column 7 lines 34-38). Geng differs from the claimed invention in that it does not explicitly teach redundant encoded projection data and restricting the search for corresponding image points to problem areas in which an evaluation of the pattern images only produce an erroneous result.

Pettersen et al. teaches a method and system, using cameras, for determination of relative position and/or orientation of objects by projecting a pattern (Abstract, [0001]-[0008] and Figs. 2, 5 & 6). Further, Pettersen et al. teaches “The method of calculation is bases on minimizing errors (least squares method) such that the redundant information is used” (i.e. redundant encoded projection data and restricting the search for corresponding image points to problem areas in which an evaluation of the pattern images only produce an erroneous result, [0025] and Fig. 2]). Since Pettersen et al. teaches the redundant data is used to minimize errors, it would have been obvious to one of ordinary skill in the art to search the redundant information for corresponding image points to problem areas in which an evaluation of the pattern images produces an erroneous result in order to correct the result, thus minimizing errors.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Pettersen et al. with Geng

because Pettersen et al. teaches the principle of coordinate determination from the imaging of a common point in two or more cameras and a means for coordinate measurement that gives full flexibility with respect to the number of cameras and other features ([0009]-[0014] and [0021]-[0022]), thereby improving the flexibility of the system.

Regarding **claim 11**, Geng teaches the limitations of claim 10 as indicated above. Further, Geng teaches:

The method as claimed in claim 10, wherein corresponding pixels (S_l, S_r) are searched for along epipolar lines (16, 17) (see epipolar line, column 8 lines 20-48 and Fig. 5).

Regarding **claim 12**, Geng and Pettersen et al. teach the limitations of claim 10 as indicated above. Further, Geng teaches:

3. The method as claimed in claim 10, wherein epipolar lines (16, 17) pass through a plurality of marks of the pattern (4) (see epipolar line, column 8 lines 20-48 and Fig. 5).

Regarding **claim 13**, Geng and Pettersen et al. teach the limitations of claim 1 as indicated above. Further, Geng teaches:

The device according to claim 1, wherein the pattern (4) is composed of stripes that are projected consecutively onto the object (2), with stripe widths of the pattern varying (see "producing a continuous spatially varying wavelength (rainbow-like color) illumination of the scene", column 3 lines 34-36; see also "the LVWF is a rectangular optical glass plate coated with gradually varying wavelengths of colors", column 6 lines

1-3; see also “popular structured light techniques include light stripe method…active triangulation a beam of light is used to form a bright stripe on an object's surface”, column 2 lines 8-17).

Regarding **claim 14**, Geng and Pettersen et al. teach the limitations of claim 1 as indicated above. Further, Geng teaches:

The device according to claim 1, wherein the two object images (8, 9) yield three-dimensional data (see “the proposed Rainbow Stereo 3D camera exploits a projected rainbow color pattern as unique landmarks of each pixel for correspondence registration…A simple and efficient 3D triangulation algorithm can be formulated to generate full frames of 3D images in high speed”, column 3 lines 44-54).

Regarding **claim 17**, Geng and Pettersen et al. teach the limitations of claim 10 as indicated above. Further, Geng teaches:

The method according to claim 10, wherein the pattern (4) is composed of stripes that are projected consecutively onto the object (2), with stripe widths of the pattern varying (see “producing a continuous spatially varying wavelength (rainbow-like color) illumination of the scene”, column 3 lines 34-36; see also “the LVWF is a rectangular optical glass plate coated with gradually varying wavelengths of colors”, column 6 lines 1-3; see also “popular structured light techniques include light stripe method…active triangulation a beam of light is used to form a bright stripe on an object's surface”, column 2 lines 8-17).

Regarding **claim 18**, Geng and Pettersen et al. teach the limitations of claim 10 as indicated above. Further, Geng teaches:

The method according to claim 10, wherein the two object images (8, 9) yield three-dimensional data (see “the proposed Rainbow Stereo 3D camera exploits a projected rainbow color pattern as unique landmarks of each pixel for correspondence registration…A simple and efficient 3D triangulation algorithm can be formulated to generate full frames of 3D images in high speed”, column 3 lines 44-54).

Response to Arguments

4. Applicant's arguments filed December 28, 2010 have been fully considered but they are not persuasive.

Applicant argues:

> GENG merely uses 1:1 “*camera-camera-triangulation*”approach. This can be seen in Figures 1 and 2 of GENG, which are reproduced below…
>
> GENG teaches: *"the rainbow stereo 3D camera is based on a novel approach to producing a continuous spatially varying wavelength (rainbow like color) illumination of the scene. Two color CCD cameras or two locations of a camera separated by a baseline distance are used to capture stereo pair images of the scene at the camera's frame rate. The 3D depth values are calculated using triangulation principle by finding pixels corresponding to a common color feature in both images."* Column 3 lines 34-42 and Figures 1-2.
>
> The Office Action does not use a constant definition for the term *“baseline distance”* throughout. According to the above recitation a *“baseline distance”* is a distance between two camera locations.

The Examiner respectfully disagrees and asserts that the interpretation of “baseline distance” is consistent with the teachings of Geng. Geng teaches “In the most straightforward form of active triangulation a beam of light is used to form a bright stripe on an object's surface and a ***camera*** displaced in a ***known distance (base line***) from the ***light source*** views the scene” (emphasis added, column 2 lines 13-17). In this case, Geng teaches that the base line is the known distance between a camera and a light source e.g. a projector and thus Geng teaches "camera-projector-

triangulation". By Applicant's own admission (see pages 12-13 of remarks filed December 28, 2010), Geng teaches "camera-camera-triangulation". It is further noted that Geng discloses ""the length of "base line", B, between two cameras is known" (i.e. "camera-camera-triangulation", column 4 lines 35-37). The Examiner maintains that Geng and Pettersen et al. teaches or suggests the limitations of the claims as indicated above.

Applicant argues:

> Moreover, GENG does not disclose determining additional spatial co-ordinates by a triangulation method in problem areas, in which an evaluation of the redundant data of the object image produces an erroneous result, since GENG does not evaluate redundant data of the object images, but computes a variance of intensity over a window area surrounding each pixel of the object image (see GENG at column 10, lines 8 to 11).

Initially it is noted that Geng et al. was not relied upon to teach this limitation. It is further noted that Geng teaches searching for corresponding image points (see "the colors of corresponding pixel in searching space is unique and distinguishable", column 7 lines38-39 and "the search of matching points requires less complex computations", column 8 lines 12-13).

Applicant argues:

> The use of redundant encoded projection data is also not disclosed in PETTERSEN et al. In addition, PETTERSEN et al. do not disclose the projection of any pattern at all.

Pettersen et al. teaches the projection of "light spots" (see Abstract and [0004]). One of ordinary skill in the art would readily recognize the projection of light spots as a projected pattern (see, for example, "the projection of a pattern of light such as ***an array of dots***, stripes, or a grid simultaneously onto the scene", emphasis added, as

disclosed in Geng, column 2 lines 26-28), therefore Pettersen et al. teaches the projection of a pattern. Further, Pettersen et al. teaches determination of spatial coordinates wherein "The calculation requires the distance of at least one distance between two points to be known to give correct scale information to the system of equations. The method of calculations is base on minimizing errors...such that redundant information is used" (i.e. redundant encoded projection data, [0024]-[0025]). The Examiner maintains that Geng and Pettersen et al. teaches or suggests the limitations of the claims as indicated above.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Forster et al. in US Publication 2006/0098212 (see IDS filed November 6, 2006 item no. 1) teaches three-dimensional detection of objects wherein “a known position of the projector and the camera, the three-dimensional data of an object point on the surface of the object to be detected can be calculated” (i.e. camera-projector-triangulation, [0006] and [0029]) and “the projection coordinates are encoded in the color pattern with the aid of a redundant code…a projector which projects a redundantly coded color pattern onto the object to be detected” (i.e. redundant encoded projection data, [0005]-[0006]). Further Forester et al. teaches restricting the search for corresponding image points to problem areas in which an evaluation of the pattern images only produce an erroneous result (see “Errors attributable to changes in the coloring of the object to be detected can be eliminated by these two methods”, [0018];

see also "...requirements for the encoding of the color pattern allow errors in decoding to be reliably detected. Decoding is undertaken here by the analysis unit...checking the size of the color change and the correlation of the color changes...Finally the color changes are checked for matches with the encoded codewords of the color change and the projection data assigned to a point of the recorded image", [0020]-[0022]; see also [0030]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Forster et al. with Geng because Forster et al. teaches "a method for three-dimensional detection of objects which is not adversely affected either by the coloration or by indentations in the object to be detected" ([0009]) and One of ordinary skill in the art would have been capable of applying this known technique to a known method that was ready for improvement and the results would have been predictable to one of ordinary skill in the art.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mi'schita' Henson whose telephone number is (571) 270-3944. The examiner can normally be reached on Monday - Thursday 7:30 a.m. - 4:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

02/26/2011
/Mi'schita' Henson/
Examiner, Art Unit 2857

Drew A. Dunn
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Supervisory Patent Examiner, Art Unit 2857